Note: -

(1) Although the potential is based on surplus agro-residues, in practice there are several barriers in collection and transportation of such agro-residues to the generation site and biomass power generation units prefer to use fuel-wood for techno economic reasons. A potential of 45,000 MWe from around 20mha of wastelands assumed to be yielding 10MT/ha/annum of woody biomass having 4000 k-cal/kg with system efficiency of 30% and 75% PLF has not been taken into account. In order to realize this potential a major inter-Ministerial initiative involving, among others, Environment and Forests, Agriculture, Rural Development, and Panchayati Raj would be required. Further, a Biomass Atlas is under preparation which is expected to more accurately assess State-wise renewable energy potential from agro-residues.

(2) Potential based on areas having wind power density (wpd) greater than 200 W/m^2 assuming land availability in potential areas @ 1 per cent and requirement of wind farms @ 12 ha/MW, not all of which may be technically feasible for grid-interactive wind power. In line with international practice for setting up grid-interactive wind power systems on sites having wpd greater than 300 W/m^2, potential would be 5000 MW. Further, preliminary surveys do not at this juncture suggest a sizeable grid-interactive off-shore wind power potential.

(3) Technically feasible and economically viable hydro potential is generally accepted at 40% of the total estimated potential. Accordingly, the technically feasible and economically viable small hydropower potential could be around 6000MW.

(4) With new sugar mills and modernization of existing ones, technically feasible potential is assessed at 5000 MWe, not all of which may be economically viable. Furthermore, several sugar companies/ cooperatives are unable to develop bankable projects on account of their financial and liquidity positions.

(5) With expansion of urban population post census 2001, current technically feasible municipal waste-to-energy potential is assessed at 1700 MWe, not all of which may be economically viable. However, subsidy disbursement under the municipal waste to energy programme had been kept in abeyance on the orders of the Supreme Court in the case of a PIL, in May, 2005. This stay has now been vacated for setting up 5 pilot projects.

(6) Not all of this renewable energy potential may be suitable for grid-interactive power for technical and/ or economic reasons. Further, estimate excludes potential for solar power which is dependent on future developments that might make solar technology cost-competitive for grid-interactive power generation applications.

Harnessing the bio-mass energy

2222. SHRIMATI SHOBHANA BHARTIA: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether Government have signed a $ 39.15 million project with UNDP Global Environment Fund and German financial institution kfw Bankengruppe, to develop projects for harnessing the bio-mass energy resources in the country;

(b) if so, whether this project would be financed by UNDPGEF to the tune of $ 5.65 million, and co-financed by Government; and

(c) the main aim and objectives of this project?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) Yes, Madam.

(b) The cost of the project is estimated at US $ 39.15 million of which US $ 5.65 million is a grant from the Global Environment Facility apart from US $ 5.24 million equivalent as contribution from this Ministry and US $ 24.82 million as proposed

concessional credit from Kreditanstalt fur Wiederaufbau (KfW), Germany with the remaining US $ 3.44 million as likely investment from prospective project promoters.

(c) The project aims to accelerate the deployment of biomass energy and/or electricity in a sustainable and cost-effective manner in the country.

Projects under national programme on energy recovery from urban and industrial wastes

2223. SHRI MAHMOOD A. MADANI:
SHRI SANTOSH BAGRODIA:

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the number and details of projects taken up under the National Programme on Energy Recovery from Urban and Industrial wastes, State-wise and capacity-wise;

(b) whether all the projects have been commissioned, if not, the details of the incomplete projects;

(c) which are the agencies identified to undertake such projects;

(d) whether such projects are commercially viable;

(e) whether the programme provides for the recurrent maintenance cost, if not, who provides for such recurrent cost; and

(f) the steps being taken to further promote this programme?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) A total of 48 projects with an aggregate capacity of about 83.61 MW on energy recovery from Urban and Industrial Wastes have so far been taken up in nine States. The State-wise details are given in the Statement (*See* below).

(c) The projects can be taken up by urban local bodies, other Government organisations, private developers, industries or through public private partnership.

(d) Waste-to-Energy projects require financial, fiscal and other promotional incentives for commercial viability.

(e) The recurring maintenance costs are borne by the owners of the projects.

(f) Besides financial assistance for setting up of projects, the programmes provide for capacity building, dissemination of information and creation of awareness through training programmes, workshops, seminars, etc.